

# Polaris introducing flat-proof "airless" tires

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All-terrain vehicle riders, the pain will soon be over.

For years, pneumatic tires -- the kind you fill with air -- have been a burr in the side of the ATV industry. Even on short excursions over rocky terrain a popped tire is not unexpected, and they often occur far from home.

Now, off-road vehicle specialist Polaris plans to debut a consumer version of an "airless" Non-Pneumatic Tire (NPT) by early next year.

Made from a proprietary plastic, the NPT replaces the conventional tire carcass with a flexible web.

"The tire works very similar to a bicycle wheel, where the load is carried in tension across the top of the wheel," says Polaris spokesperson Jason Difuccia. "The bottom of the wheel is designed to give in to obstacles like rocks, curbs, and other terrain."

That means: no punctures in the wilderness, and no need to carry a tire repair kit.

The NPT was originally developed by a small Wisconsin-based startup called Resilient Technologies, which was acquired by Polaris last year.

Seeing it in operation is nothing short of astounding: the tire rolls over sharp rocks, poking tree branches, and harmful tree stumps without a problem. The NPT has three main components: the web structure, an outer rubber tread band, and a solid inner steel rim mounted to the axle. Polaris says the open design means dirt, tree branches, and gravel will shift and fall out as you ride, rather than getting stuck inside.

But preventing flats isn't the NPTs only advantage over conventional rubber. For new riders, Polaris says the airless tire absorbs impacts without the typical jarring bounce of a pneumatic tire. That means a safer, more sure-footed ride even over tough, dangerous terrain and quicker response to steering inputs.

To make sure the NPT can withstand long-term abuse, it was put through military-grade testing. Engineers shot test tires with .50 caliber rounds and then subjected them to 5,000 hours of off-roading. On another outing that involved crossing a train tracks, a rail spike punctured the tread band of an NPT, but the rider kept going on it for more than 1,000 miles.

Pricing has not been announced, but Difuccia says the NPTs are all about buying the confidence that they won't leave you stranded.

The NPT is also quieter than a typical tire, which emanates a loud noise when used on pavement, its air-filled cavity acting almost like an amplifying speaker. With the NPT, there is barely any sound.

"There is nowhere for the sound to pool, so there's no humming or drumming like there is with a standard pneumatic tire," says Polaris business development representative Joaquin Salas.

Salas says his team has started taking even longer rides, including one recent test in Sierra Nevada. During the test, they had four riders, two using standard tires and on NPTs. They had three flats on the standard tires and no problem with the NPTs.

Now, if they can just figure out how to make an ATV that doesn't run out of fuel, we'll all be set.